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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/413,348 10/06/99 FUKUTOMI

N Q56091

QM02/1030
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WASHINGTON DC 20037

EXAMINER

KIM, C

ART UNIT

PAPER NUMBER

3752

DATE MAILED:
10/30/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.
09/413,348

Applicant(s)

Fukutomi et al.

Examiner

Christopher S. Kim

Group Art Unit

3752



☒ Responsive to communication(s) filed on 8 Aug 2000

☒ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 35 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claim

☒ Claim(s) 2-6 is/are pending in the application

Of the above, claim(s) 3-5 is/are withdrawn from consideration

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 2 and 6 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☒ The proposed drawing correction, filed on 8 Aug 2000 is ☒ approved ☐ disapproved.

☒ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☒ received.

☐ received in Application No. (Series Code/Serial Number) _____

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s) _____

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

— SEE OFFICE ACTION ON THE FOLLOWING PAGES —

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DETAILED ACTION

Drawings

1. The proposed drawing correction and/or the proposed substitute sheets of drawings, filed on August 8, 2000 have been approved.

Specification

2. Applicant is encouraged to carefully review and correct the specification for proper idiomatic English. The disclosure is objected to because of the following informalities:
on page 10, line 22 and throughout the specification, "bound" should read --bounce--;
Appropriate correction is required.

Claim Objections

3. Claim 2 is objected to because of the following informalities: in line 2, "sleeve disposed" should read --sleeve, said sleeve--; in line 4, the comma should be deleted. It will be considered as such in this office action. Appropriate correction is required.

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Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cerny et al. in view of Beatty et al.

Cerny et al. disclose, in figure 2, an injector comprising: a solenoid 76; a valve 50; a sleeve 78 (referred to as a bobbin member); and a buffer zone 86'. Although Cerny et al. do not specifically indicate a buffer zone or the issue of needle bounce, they are inherent in the device. Beatty et al. disclose a seal 24; elastic member 130, 230, 135; and groove 125, 225. It would have been obvious to a person having ordinary skill in the art at the time of the invention to have incorporated the elastic member (accumulator) of Beatty et al. to the pole piece 96 of Cerny et al. to reduce the pressure applied to the seal 100.

Response to Arguments

6. Applicant's arguments filed August 8, 2000 have been fully considered but they are not persuasive.

In response to applicants' comment regarding reference number 86 designating a coil, paragraph 9 of the prior office action identifies the buffer zone as the area of Cerny et al. figure 2 designated with reference number 86' (eighty six prime).

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In response to applicants' argument that "damping a change of fuel pressure caused by the valve bounce when the needle valve is closed" is not identified in the prior art, the recitation of "damping a change of fuel pressure caused by the valve bounce when the needle valve is closed", as presented in claim 6, is considered to be an intended use of the buffer portion and is not considered to be a positively claimed limitation.

In response to applicants' argument that the prior art does not show the "buffer portion faces and contacts a fuel passage located at an upstream side with respect to an end face of said armature located on a side of a nozzle opening side", the buffer portion 86' (eighty six prime) of Cerny et al. faces and contacts a fuel passage (between core 96 and sleeve 78) located at an upstream side with respect to an end face (bottom of armature 110) of said armature 110 located on a side of a nozzle opening side. Applicants disclose, in the specification, on page 6, lines 14-19, "a metal sleeve 17 is arranged between the core 4 and the valve holder 10 and connected to the core 4 and the valve holder 10, respectively, by means of welding and the like. With this fastening means, the fastening portion of the sleeve 17 serves to seal the inside fuel."; in lines 25, "ring 18 as an elastic member is disposed in the groove 18a"; on page 7, lines 9-11, "A buffer portion in fuel pressure is formed by making use of the property as an elastic body of the rubber ring 18." In figure 1, sleeve 17 is shown as having a surface which contacts the core 4 from top to bottom, with the exception of the area over rubber ring 18. Therefore, the "fuel passage" recited in claim 6 ("said buffer portion faces and contacts a fuel passage") is considered to be the space (however minute, possibly seepage space) between sleeve 17 and core 4. The "fuel

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passage” recited in claim 6 is not considered the passage in which spring 16 resides. The examiner believes that the claim language reads on the cited reference.

In response to applicants’ argument that the examiner has failed to supply any motivation why one of ordinary skill in the art would provide an elastic member where the examiner has indicated, placing an elastic member of Beatty et al. near each of the O-rings of Cerny et al. to reduce the pressure applied to each of the O-rings would have still met the limitations of the claimed invention.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher S. Kim whose telephone number is (703) 308-8336. The examiner can normally be reached on Monday-Thursday from 6:30 a.m. to 5:00 p.m.

The fax phone number for this Group is (703) 308-7766.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0861.

Lesley D. Morris
Lesley D. Morris
Primary Examiner
AU 3752
10/26/00

CK

October 26, 2000